REMARKS

This Response to Restriction/Election and Amendment is made in response to the Office Action mailed January 23, 2003 imposing a restriction/election requirement on the claims. **Applicant elects Group I (Claims 1-7) without traverse.**

Applicant has cancelled restricted and non-elected claims 8-9 without prejudice to pursue in a related application now or in the future.

Applicant has added Claims 10-58, and submits that the added claims also belong to Group I. Claim 10 recites the same limitation as in Claim 3 except it is made to be dependent from Claim 2 rather than from Claim 1.

Independent Claim 11 is similar to Claim 4 except that it recites particular structural elements rather than the "means for" language of Claim 4, and includes fewer of the elements. The elements not included in Claim 11 are instead broken out and claimed in dependent claims 12 through 33. The same search that would be required for Claims 11-33 are also required for Claim 4.

Independent Claim 34 is analogous to Claim 5 and recites analogous elements but again largely substitutes for the "means for" language in many of the claim elements and removes certain of the limitations to dependent claims 35-42.

Independent Claim 43 is analogous to Claim 6 but again removes the "means for" language. Claim 57 recites a particular signal type that may be processed by the signal processor of Claim 43. Claim 58 is an independent claim directed to a signal that recites the same elements as claim 58. Claim 58 is therefore linked to claims 43 and 57.

Independent Claim 44 is directed to a method of processing signals and is modeled after the claims that recite exemplary structure and function for performing such processing, such as Claim 4. Again, some elements for the method claim have been placed in dependent claims 45-56.

Applicant submits that all of the added claims are supported by the disclosure as filed and that no new matter has been added. Several amendments to elements of claims 1, 2, 4, 5, and 6 are of a typographical nature generally adding a hyphen between two words only and are not associated with the patentability of the subject matter claimed.

Applicant has also amended the title to more nearly indicate the subject matter now claimed by replacing "" with --BIT RATE AGILE THIRD-GENERATION WIRELESS CDMA, GSM, TDMA AND OFDM SYSTEM--.

A marked-up version of claims amended as above is attached herein, entitled **Version with Markings to Show Changes Made**. For the Examiner's convenience, a clean copy of all pending claims is attached, entitled "**Appendix A: Pending Claims**". Support for the above claim amendments can be found in the disclosure as originally filed including in the originally filed claims, accordingly no new matter is presented, and entry of the amendment is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required by this Amendment and Response to Restriction/Election including fees for added claims not otherwise paid for, or to credit any overpayment, to Deposit Account No. 50-2319 (No. A-66732-3/RMA).

Signed this 21st day of February, 2003, at Palo Alto, California.

RESPECTFULLY SUBMITTED,
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VERSION WITH MARKINGS SHOWING CHANGES MADE IN THE CLAIMS

IN THE TITLE:

The Title has been amended by replacing:

~~**Receivers and Demodulators for Quadrature Modulated FQPSK, FGMSK, and FQAM Signals**~~

with:

BIT RATE AGILE THIRD-GENERATION WIRELESS CDMA, GSM, TDMA AND OFDM SYSTEM

IN THE CLAIMS:

Claims 1, 2, 4, 5, and 6 were amended as follows:

1. (Amended) A Bit Rate Agile (BRA) structure comprising:

an input port for receiving input data;

a splitter having an input coupled to said input port, and serving to split said input data into baseband signal streams;

a baseband signal processing network for receiving said baseband signal streams and providing cross-correlated and filtered Bit Rate Agile (BRA) in-phase and quadrature-phase baseband signals;

a Quadrature Modulator serving to quadrature modulate said cross-correlated filtered in-phase and quadrature-phase baseband signals;

an interface transmitter port to provide said quadrature modulated signal to the transmission medium;

an interface receiver port to provide connection of the said cross-correlated filtered quadrature modulated signal to the demodulator; and

a demodulator structure to serve for Bit Rate Agile (BRA) signal demodulation having Bit Rate Agile (BRA) demodulation filters Mis-Matched (MM) to that of the modulator filters.

2. (Amended) The structure as in Claim 1 wherein said processed in-phase and quadrature-phase baseband signals have amplitudes such that their vector sum is substantially constant and has reduced resultant quadrature modulated envelope fluctuations.

4. (Amended) A cross-correlated signal processor for Bit Rate Agile (BRA) Modulation-Demodulation (Modem) Format Selectable (MFS) and Code Selectable (CS) ~~means~~ wireless systems including bit rate agile wireless CDMA, GSM, OFDM and TDMA systems, the signal processor comprising:

(a) means for providing in-phase and quadrature-phase signals;

(b) means for cross-correlating a fraction of a symbol or one or more than one symbol of the in-phase (I) signal with a fraction of a symbol or one or more than one symbol of the quadrature-phase (Q) signal;

(c) means for generating filtered cross-correlated I and Q signals;

(d) means for implementing the cross-correlated signals by analog active or passive circuits, by digital circuits or combination thereof;

(e) means for providing a control circuit to select from a set of predetermined cross-correlated ~~signal elements filters and selectable~~ waveforms provided to filters in the I and/or Q channels;

(f) means for Quadrature modulating the I and Q signals;

(g) means for Linear and/or Nonlinear amplification to provide to the antenna;

(h) a receiver port for connection of the received cross-correlated signal to the BRA and MFS demodulator;

(i) a BRA and MFS quadrature demodulator; and

(j) a Mis-Matched (MM) BRA and MFS demodulator filter set in which the said demodulator filter set is MM to that of the BRA and MFS filter set of the modulator.

5. (Amended) Cross-correlated signal processor means for Bit Rate Agile (BRA) and Modulation-Demodulation (Modem) Format Selectable (MFS) and Code Selectable (CS) means comprising:

(a) processing means for one or more input signals and providing in-phase (I) and quadrature-phase shifted (Q) signals;

(b) means for cross-correlating the in-phase and quadrature shifted signals;

(c) means for generating in-phase and quadrature-phase shifted output signals having amplitudes such that the vector sum of the output signals is approximately the same at virtually all phase angles of each bit period for one set of cross-correlation and filter parameters and the vector sum is not constant for an other set of chosen filter parameters;

(d) means for quadrature modulating the in-phase and quadrature output signals, to provide a cross-correlated modulated output signal;

(e) means for providing a control circuit to select from a set of predetermined cross-correlated signal elements filters and selectable waveforms in the I and/or Q channels;

(f) means for Quadrature modulating the I and Q signals;

(g) means for Linear and/or Nonlinear amplification to provide to the antenna

(h) a receiver port for connection of the received cross-correlated signal to the BRA and MFS demodulator;

(i) a BRA and MFS quadrature demodulator; and

(j) a Mis-Matched (MM) BRA and MFS demodulator filter set in which the demodulator filter set is MM to that of the BRA and MFS filter set of the modulator.

6. (Amended) A cross-correlated signal processor comprising:

(a) means for cross-correlating a fraction, or one or more than one symbol synchronous and/or asynchronous time constrained signal (TCS) response and cascaded long response (LR) filtered signal symbols of one or more input signals with signal symbols of a quadrature-phase shifted signal of the in-phase signal, and providing in-phase (I) and quadrature-phase (Q) shifted signals for Bit Rate Agile (BRA), cascaded mis-matched (ACM) Modulation-Demodulation (Modem) Format Selectable (MFS) and Code Selectable (CS) processing, according to the following schedule:

(i) when the in-phase channel signal is zero, the quadrature shifted signal is close to the maximum amplitude normalized to one (1);

(ii) when the in-phase channel signal is non-zero, the maximum magnitude of the quadrature shifted signal is reduced from 1 (normalized) to A, where $0 \leq A \leq 1$;

(iii) when the quadrature channel signal is zero, the in-phase signal close to the maximum amplitude;

(iv) when the quadrature channel signal is non-zero, the in-phase signal is reduced from 1 (normalized) to A, where $0 \leq A \leq 1$;

(b) means for quadrature modulating the in-phase and quadrature output signals to provide a cross-correlated modulated output signal;

(c) controlling means and signal selection means for BRA rate, MFS and CS processor selection and selection for Linear and/or Non-Linearly Amplified (NLA) baseband and/or of Quadrature modulated signals;

(d) coupling port means to the transmission medium;

(e) a receiver port for connection of the received cross-correlated signal to the BRA, MFS and CS demodulator;

(f) a BRA, MFS and CS quadrature demodulator; and

(g) a Mis-Matched (MM) demodulator filter set for BRA, MFS and CS in which the said demodulator filter set is MM to that of the BRA, MFS and BRA filter set of the modulator.

Claims 8-9 were cancelled without prejudice or disclaimer.

Claims 10-58 were added.